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Title: Simulation Model for a Needs-Based Health Care Planning in Switzerland: the Example of Coronary Heart Disease

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Abstract

Health care policy interventions rely on the analysis of demand and utilization of health care services. For this analysis, three types of methodological approaches are distinguished: supply projections or trend models, demand-based approaches and needs-based approaches. However, only few needs-based studies have been undertaken to date.

The objective of this project is to provide an instrument for a needs-based analysis of the amount of medical services for an exemplary disease in the Swiss population. For this purpose, we focus on coronary heart disease and develop a dynamic simulation model that follows the stages from the onset of symptoms to diagnostic and therapeutic interventions, and finally to a stage with diagnosed coronary heart disease. The model includes outpatient as well as inpatient treatment. Risk factors taken into consideration are gender, age, smoking and hypertension. Time horizon of the model is 2000 – 2030.

We calculate incidence and prevalence of coronary heart disease in the Swiss population as well as the amount of medical services along the stages from diagnosis and treatment to follow-up. In particular, we study the effect of practice variation and of interventions in primary and secondary prevention on the amount of these medical services. This analysis might indicate potential inefficiencies and/or potential over/underuse of medical services for diagnosis and treatment of coronary heart disease.

Thus, in the broader context of the discussion of an appropriate medical supply, the project seeks to make two contributions. First, we want to assess the potential of the developed simulation model as an instrument for a needs-based health care planning and second, we want to create the prerequisites for a future integration of supply and demand in a dynamic simulation model. Such a model could then contribute to a more focused and transparent discussion of appropriate medical supply.